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(54) Title: COMPOSITION CONTAINING A 15-KETO PROSTAGLANDIN COMPOUND FOR TREATING OF OCULAR HYPERTENSION AND GLAUCOMA

(57) Abstract: 15-keto prostaglandin compounds containing a ring structure at the end of the omega chain are used as ocular applied intraocular pressure reducing agents. They are applied in a dose below the known dose for the corresponding 15-OH compound.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 01/06211

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61K31/557 A61K31/5575 A61P27/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
 IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, MEDLINE, BIOSIS, EMBASE, SCISEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 01 68072 A (UENO SEIYAKU OYO KENKYUJO KK) 20 September 2001 (2001-09-20) abstract page 4, line 14 - line 19 page 9, line 6 - line 12 page 23, line 16 - line 20; claims 1-3,6,10,22,23,26,30,41-43,46,50 ---	1-30
X	US 5 321 128 A (STJERN SCHANTZ JOHAN W ET AL) 14 June 1994 (1994-06-14) cited in the application abstract column 4, line 64 - line 68 column 5, line 33 - line 66; example 12; tables I,II,III,VI,IX --- -/-	1-30

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the International search report

2 December 2002

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 011 062 A (SCHNEIDER L WAYNE ET AL) 4 January 2000 (2000-01-04) abstract column 6, line 13 column 6, line 55 - line 65; claims ----	1-30
A	WO 99 51273 A (ALCON LAB INC) 14 October 1999 (1999-10-14) claims 1-5 ----	1-30
A	EP 0 366 279 A (UENO SEIYAKU OYO KENKYUJO KK) 2 May 1990 (1990-05-02) abstract; claims; examples ----	1-30
A	EP 0 308 135 A (UENO SEIYAKU OYO KENKYUJO KK) 22 March 1989 (1989-03-22) abstract; claims; examples -----	1-30

INTERNATIONAL SEARCH REPORT

International Application No. PCT/JP 01 A6211

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 3,5,9,13,15,19,23,25,29

Present claims 1,4,6,7,10,11,14,16,17,20,21,24,26,27,30 relate to an extremely large number of possible compounds (any "15-keto prostaglandin derivatives containing a ring structure at the end of the omega chain"). Support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Furthermore, the term "functional derivative" used in claims 2,8,12,18,22,28 is vague and indefinite and as such renders the scope of the claims unclear. The lack of clarity is such as to render a meaningful complete search impossible.

Finally, the compound mentioned in claims 3,5,9,13,15,19,23,25,29 is not a 15-keto prostaglandin compound containing a ring structure at the end of the omega chain and does not fall under the general formula (I). The subject-matter of said claims is obviously an error and was not searched.

Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds such as defined by formula (I), in particular 15-keto latanoprost, with due regard to the general idea underlying the present invention.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP 01/06211

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 11-20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.: 3,5,9,13,15,19,23,25,29 because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 01/06211

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 0168072	A 20-09-2001	US 2001034355 A1 AU 4114301 A WO 0168072 A2 US 2001056104 A1 US 2002022644 A1		25-10-2001 24-09-2001 20-09-2001 27-12-2001 21-02-2002
US 5321128	A 14-06-1994	US 5422369 A AT 101342 T AT 227576 T AU 625096 B2 AU 4189889 A DE 68913000 D1 DE 68913000 T2 DK 112190 A EP 1225168 A2 EP 1224934 A2 EP 1224935 A2 EP 0364417 A1 EP 0569046 A1 ES 2062102 T3 FI 92690 B HK 159095 A HU 9500316 A3 JP 10081624 A JP 2955213 B2 JP 8109132 A JP 2721414 B2 JP 3501025 T WO 9002553 A1 US 6030999 A US 5578618 A US 5849791 A US 5627208 A US 6429226 B1 US 2001014693 A1 US 5422368 A US 5296504 A SE 8803855 A US 6187813 B1		06-06-1995 15-02-1994 15-11-2002 02-07-1992 02-04-1990 24-03-1994 16-06-1994 04-05-1990 24-07-2002 24-07-2002 18-04-1990 10-11-1993 16-12-1994 15-09-1994 20-10-1995 28-09-1995 31-03-1998 04-10-1999 30-04-1996 04-03-1998 07-03-1991 22-03-1990 29-02-2000 26-11-1996 15-12-1998 06-05-1997 06-08-2002 16-08-2001 06-06-1995 22-03-1994 28-10-1988 13-02-2001
US 6011062	A 04-01-2000	US 5849792 A US 5631287 A AT 208621 T AU 700574 B2 AU 4649596 A CA 2181172 A1 DE 69523951 D1 DE 69523951 T2 DK 812198 T3 EP 0812198 A1 ES 2162951 T3 JP 11500122 T PT 812198 T WO 9729752 A1		15-12-1998 20-05-1997 15-11-2001 07-01-1999 02-09-1997 23-06-1996 20-12-2001 04-04-2002 18-03-2002 17-12-1997 16-01-2002 06-01-1999 28-02-2002 21-08-1997
WO 9951273	A 14-10-1999	AU 740586 B2 AU 3194799 A BR 9910113 A		08-11-2001 25-10-1999 26-12-2000

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 01/06211

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 9951273 .	A	CA	2322579 A1	14-10-1999
		CN	1295483 T	16-05-2001
		EP	1069913 A1	24-01-2001
		JP	2002510654 T	09-04-2002
		NZ	506921 A	01-02-2002
		TR	200002848 T2	21-02-2001
		WO	9951273 A1	14-10-1999
		US	6261547 B1	17-07-2001
EP 0366279	A 02-05-1990	JP	2008226 C	11-01-1996
		JP	2096528 A	09-04-1990
		JP	7039343 B	01-05-1995
		JP	2009965 C	02-02-1996
		JP	2096529 A	09-04-1990
		JP	7039344 B	01-05-1995
		AT	111736 T	15-10-1994
		AT	162074 T	15-01-1998
		DE	68918391 D1	27-10-1994
		DE	68918391 T2	19-01-1995
		DE	68928551 D1	19-02-1998
		DE	68928551 T2	23-04-1998
		EP	0366279 A2	02-05-1990
		EP	0580268 A2	26-01-1994
		US	6420422 B1	16-07-2002
		US	5194429 A	16-03-1993
		US	5236907 A	17-08-1993
EP 0308135	A 22-03-1989	AT	72235 T	15-02-1992
		AT	82499 T	15-12-1992
		AT	108330 T	15-07-1994
		AU	600168 B2	02-08-1990
		AU	2231388 A	23-03-1989
		CA	1324129 A1	09-11-1993
		CA	1328075 A1	29-03-1994
		DE	3850676 D1	18-08-1994
		DE	3868127 D1	12-03-1992
		DE	3876050 D1	24-12-1992
		DE	3876050 T2	25-03-1993
		EP	0289349 A1	02-11-1988
		EP	0308135 A2	22-03-1989
		EP	0455264 A2	06-11-1991
		ES	2032016 T3	01-01-1993
		ES	2052735 T3	16-07-1994
		GB	2209939 A ,B	01-06-1989
		GR	3003749 T3	16-03-1993
		GR	3006319 T3	21-06-1993
		JP	2592204 B2	19-03-1997
		JP	6080571 A	22-03-1994
		JP	1151552 A	14-06-1989
		JP	1941635 C	23-06-1995
		JP	6067900 B	31-08-1994
		JP	1858208 C	27-07-1994
		JP	2000108 A	05-01-1990
		JP	5071567 B	07-10-1993
		KR	9306202 B1	08-07-1993
		KR	9300051 B1	06-01-1993
		NZ	226197 A	25-02-1992
		US	5001153 A	19-03-1991

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 01/06211

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 0308135	A	US	5591887 A	07-01-1997
		US	6420422 B1	16-07-2002
		US	5106869 A	21-04-1992
		US	5151444 A	29-09-1992
		US	5770759 A	23-06-1998
		US	5166178 A	24-11-1992
		US	5212200 A	18-05-1993
		US	5221763 A	22-06-1993
		ZA	8806871 A	30-05-1989
		ZA	8806872 A	26-07-1989
		ZA	8806909 A	30-05-1989
		OA	9028 A	31-03-1991